8421

Diag. Cht. No. 5902-2.

Form 504

U. S. DEPARTMENT OF COMMERCE

COAST AND GEODETIC SURVEY

DESCRIPTIVE REPORT

Type of Survey HYDROGRAPHIC

Field No. WCFP-1158 *Office No.* H-8421

LOCALITY

State Oregon - Washington

General locality Columbia River Estuary

Locality McKenzie Head to Hammond

1958

CHIEF OF PARTY

John O. Boyer

LIBRARY & ARCHIVES

DATE OCT 21 1958

USCOMM-DC 5087

8421

18521 - applied 10-12-77 RS/ROS

Form 537
(Ed. June 1946)

DEPARTMENT OF COMMERCE

U. S. COAST AND GEODETIC SURVEY

HYDROGRAPHIC TITLE SHEET

The Hydrographic Sheet should be accompanied by this form, filled in as completely as possible, when the sheet is forwarded to the Office.

REGISTER No. H-8421

Field No. WCFP-1158

State Oregon - Washington

General locality Columbia River Estuary

Locality McKenzie Head to Hammond

Scale 1 : 10,000 Date of survey April - August 1958

Instructions dated 14 November 1957

Vessel West Coast Field Party

Chief of party LCDR John O. Boyer

Surveyed by ENS Lawrence C. Haverkamp

Soundings taken by fathometer, graphic recorder, ~~hand lead/wire~~

Fathograms scaled by Party Personnel

Fathograms checked by Party Personnel

Protracted by LCDR J. O. Boyer and George Fernandes

Soundings penciled by LCDR J. O. Boyer and George Fernandes

Soundings in ~~fathoms~~ feet at ~~MLW~~ MLLW

REMARKS:

U. S. GOVERNMENT PRINTING OFFICE 16—66520-1

DESCRIPTIVE REPORT

TO ACCOMPANY HYDROGRAPHIC SURVEY
FIELD NO. WCFP-1158 - REGISTRY NO. H-8421

PROJECT CS-404
COLUMBIA RIVER ESTUARY

DATE OF SURVEY : APRIL - AUGUST 1958
SCALE OF SURVEY : 1:10,000

WEST COAST FIELD PARTY - LCDR JOHN O. BOYER, OFFICER IN CHARGE
SURVEYED BY: ENS LAWRENCE C. HAVERKAMP

A. PROJECT:

Instructions for project CS-404 are dated 14 November 1957 and signed by the Director.

B. SURVEY LIMITS AND DATES:

This survey extends from the Oregon to Washington shore and from McKenzie Head to Hammond. It joins contemporary surveys H-8422 to the east and H-8423 to the west. See Boat Sheet Layout attached.

Hydrography began 21 April and ended 13 August.

C. VESSEL AND EQUIPMENT:

All hydrography was done with launch CS-160, a 36-foot LCPR, except for a few pole soundings taken on shoals from a tin skiff.

808 type fathometers were used with an outboard fish. Fathometer No. 57-30 was used on "an" day, all other days were sounded with fathometer No. 148.

The fish was mounted about midship where there was no appreciable effect from squat.

The launch based at the mooring basin near Hammond.

D. TIDE AND CURRENT STATIONS:

Tide stations were maintained at Point Adams, Chinook, and Ilwaco; and a comparison was made with a gage at North Jetty to obtain corrections to apply to Point Adams tides. The sheet was divided into five tide zones: Ilwaco, Chinook, Point Adams, Point Adams minus 10 minutes minus 0.2 feet to high water, and Point Adams minus 20 minutes minus 0.4 feet to high water. The curves used for abstracting tide reducers are attached. See TIDE NOTE attached.

No current stations were observed.

E. SMOOTH SHEET:

The projection was made by hand.

The shoreline was transfered from blueline tracings of the latest incomplete manuscripts. The shoreline was not inked, but details in the water area that originated with the manuscripts were inked if verified by the hydrographer.

F. CONTROL STATIONS:

Most of the hydrographic signals were located photogrammetrically on Incomplete Manuscripts T-10345, T-10346, T-10352, and T-10353. These points were selected by the hydrographic party and located by a photo unit working out of the Portland Photogrammetric Office. Ten signals were located by 3-point sextant fixes with check angles. The remaining signals were USC&GS triangulation stations.

Many of the photogrammetric points were aids to navigation. The photo unit will locate these aids by triangulation during the fall of 1958. The manuscripts in this area are well controlled, and it is believed the photo location of these aids, as shown on the smoot sheet, is satisfactory for hydrographic control.

G. SHORELINE AND TOPOGRAPHY:

The shoreline was transfered from bluelines of Incomplete Manuscripts T-10345,46,52, and 53. The manuscripts were compiled in 1957 from 1955 photographs field inspected in 1957. Hydrography did not conflict with the shoreline from the manuscripts.

The shoreline of Clatsop Spit is subject to appreciable changes caused by spring freshets and northwest storms.

H. SOUNDINGS:

All soundings were taken with 808-type portable depth recorders, except for a few pole soundings taken over shoals. Depths were measured in feet.

The fathometer initial was kept at 2.0 feet, the approximate depth of the fish. Corrections were determined from bar checks taken at 5-foot depth intervals on 25 different days. No appreciable difference was noted between the values obtained at various stages of the tide. See abstract of Bar Checks attached.

Corrections were determined for the various scales.

All corrections were applied to the nearest 0.2 of a foot.

I. CONTROL OF HYDROGRAPHY:

Three-point sextant fixes were used to control hydrography.

J. ADEQUACY OF SURVEY:

The survey is considered complete and adequate for charting purposes, and it should supersede all previous surveys.

Junctions with contemporary surveys H-8422 to the east and H-8423 to the west are satisfactory. Depth curves at the junctions can be smoothly drawn.

K. CROSSLINES:

Crosslines were run to the extent of approximately 8 percent of the regular system of sounding lines. Crossings were satisfactory.

L. COMPARISON WITH CHART:

The stranded wreck shown at latitude 46° 17.80', longitude 124° 02.65' still exists.

It is recommended the sunken rock shown at latitude 46° 16.16', longitude 123° 58.50' be deleted. There are piling in this area, but no rock was found.

The two parts of the sunken wreck shown at latitude 46° 14.48', longitude 124° 01.53' and latitude 46° 14.60, longitude 124° 01.85' are no longer exposed. The areas were investigated at low water with no indications of the wreck except for 3 and 4 foot sand shoals built up over the spots. It is believed the wrecks have sunken down into the sand because the launch's magnetic compass was effected when over the spots. It is recommended the wreck symbols be removed from the chart since the wrecks will probably just sink deeper into the sand.

NOTED NOT CHANGED NOW. LHA 10/29/68

M: COMPARISON WITH PRIOR SURVEYS:

Comparison with survey H-7990 (1952) indicates there has been some scouring off Baker Bay West Channel East Jetty. Baker Bay West Channel has not changed appreciably. The dock area at Ilwaco has silted in 3 to 4 feet. The northwest and southeast ends of Baker Bay East Channel have shoaled appreciably. The deep area south of Sand Island is now considerably deeper.

Survey H-6178 (1936) shows a shoaling tendency off Fort Stevens while there has been a deepening south of Desdemona Sands Light. The channel north of the light has deepened some.

The area has changed entirely since survey H-1019 executed in 1868.

N. DANGERS AND SHOALS:

All dangers and shoals are evident on the smooth sheet.

O. COAST PILOT INFORMATION:

Coast Pilot information will be submitted as a separate report.

P. AIDS TO NAVIGATION:

There are many fixed aids to navigation in the area. They will be located by triangulation executed by a field unit of the Portland Photogrammetric Office during the fall of 1958. Form 567 will be submitted by that party.

The following buoys were located by the hydrographic party:

Latitude	Longitude	Name
46° 15.9'	124° 02.0'	Baker Bay West Channel Buoy 2
46° 16.0'	124° 01.9'	" " " " " 2A
46° 16.2'	124° 01.8'	" " " " " 3
46° 16.4'	124° 01.8'	" " " " " 5
46° 16.6'	124° 02.1'	" " " " " 7
46° 16.9'	124° 02.4'	" " " " " 10
46° 16.9'	124° 02.7'	" " " " " 11
46° 17.0'	124° 02.8'	" " " " " 13
46° 17.3'	124° 02.9'	" " " " " 16
46° 17.4'	124° 02.9'	" " " " " 18
46° 17.8'	124° 02.4'	" " " " " 21
46° 17.9'	124° 02.2'	" " " " " 23
46° 18.0'	124° 02.3'	Baker Bay East Channel Buoy 28
46° 17.9'	124° 01.8'	" " " " " 26
46° 17.7'	124° 01.6'	" " " " " 25
46° 17.7'	124° 01.4'	" " " " " 24
46° 17.3'	124° 00.7'	" " " " " 20
46° 17.1'	124° 00.7'	" " " " " 19
46° 17.1'	124° 00.5'	" " " " " 18
46° 16.8'	124° 00.1'	" " " " " 16
46° 16.6'	123° 59.8'	" " " " " 14
46° 16.5'	123° 59.2'	" " " " " 11
46° 16.1'	123° 58.1'	" " " " " 8
46° 16.4'	123° 57.2'	Chinook Channel Buoy 9
46° 16.0'	123° 57.2'	" " " 6
46° 16.1'	123° 57.3'	" " " 5
46° 15.9'	123° 57.4'	" " " 4
46° 15.9'	123° 57.4'	" " " 3
46° 15.8'	123° 57.5'	" " " 2
46° 15.8'	124° 02.3'	Can Buoy 1JA
46° 15.1'	124° 01.9'	Clatsop Spit Buoy 12
46° 14.7'	124° 00.2'	" " " 14
46° 14.2'	123° 59.0'	Desdemona Sands Channel Buoy 19
46° 13.6'	123° 58.2'	" " " " 21
46° 12.8'	123° 56.8'	" " " " 25
46° 12.8'	123° 57.5'	Mooring Buoy

Q. LANDMARKS FOR CHARTS:

It is recommended that the following landmarks be deleted from chart 6151.

OUTER TANK (lat. 46° 14.0', Long. 124° 04.1') - tank no longer exists.
R. TRS. (lat. 46° 11.6', long. 123° 58.4') - towers have been cut off at their base.
STACK (lat. 46° 16.4', long. 123° 48.9') - stack no longer exists.

There are many objects in this area, and the selection shown as landmarks on chart 6151 is good.

R. GEOGRAPHIC NAMES:

A report on geographic names will be submitted by the photogrammetric unit working in the area.

S. SILTED AREAS:

The bottom characteristic for most of Baker Bay is black mud. This is a large silted area, and the depths are generally a little less than years ago.

A great quantity of material settles out at the mouth of the Columbia, and annual dredging is required to maintain channel depths. This material is generally fine sand rather than silt.

T. BY-PRODUCT INFORMATION:

Desdemona Sands Channel requires annual dredging by the U. S. Engineers to maintain the project depth. It is surveyed annually by the Engineers before and after dredging. The results of their surveys are sent to the Coast Survey Washington Office, so this channel was not surveyed as a part of this project.

Northwest of Desdemona Sands is a fair anchorage. The sand bottom is fair holding ground, but the currents are strong during the spring freshets. A mooring buoy is maintained between Point Adams and Desdemona Sands Channel which is used by boats and small ships.

U. NEW CONSTRUCTION:

The boat basin at Ilwaco was completed before hydrographic operations in this area. The town expects the channel and dock area will be dredged, but it is questionable whether this work will be done in 1958.

After hydrography, a small jetty and boat basin were constructed at Chinook. The basin and Chinook Channel were to be dredged to 12 feet. The Engineers will submit a copy of their

post construction survey to C&GS, Washington.

A narrow channel and dock area at the Fort Stevens basin was dredged to 12 feet in the spring before hydrography. It is expected that this area will silt up rapidly.

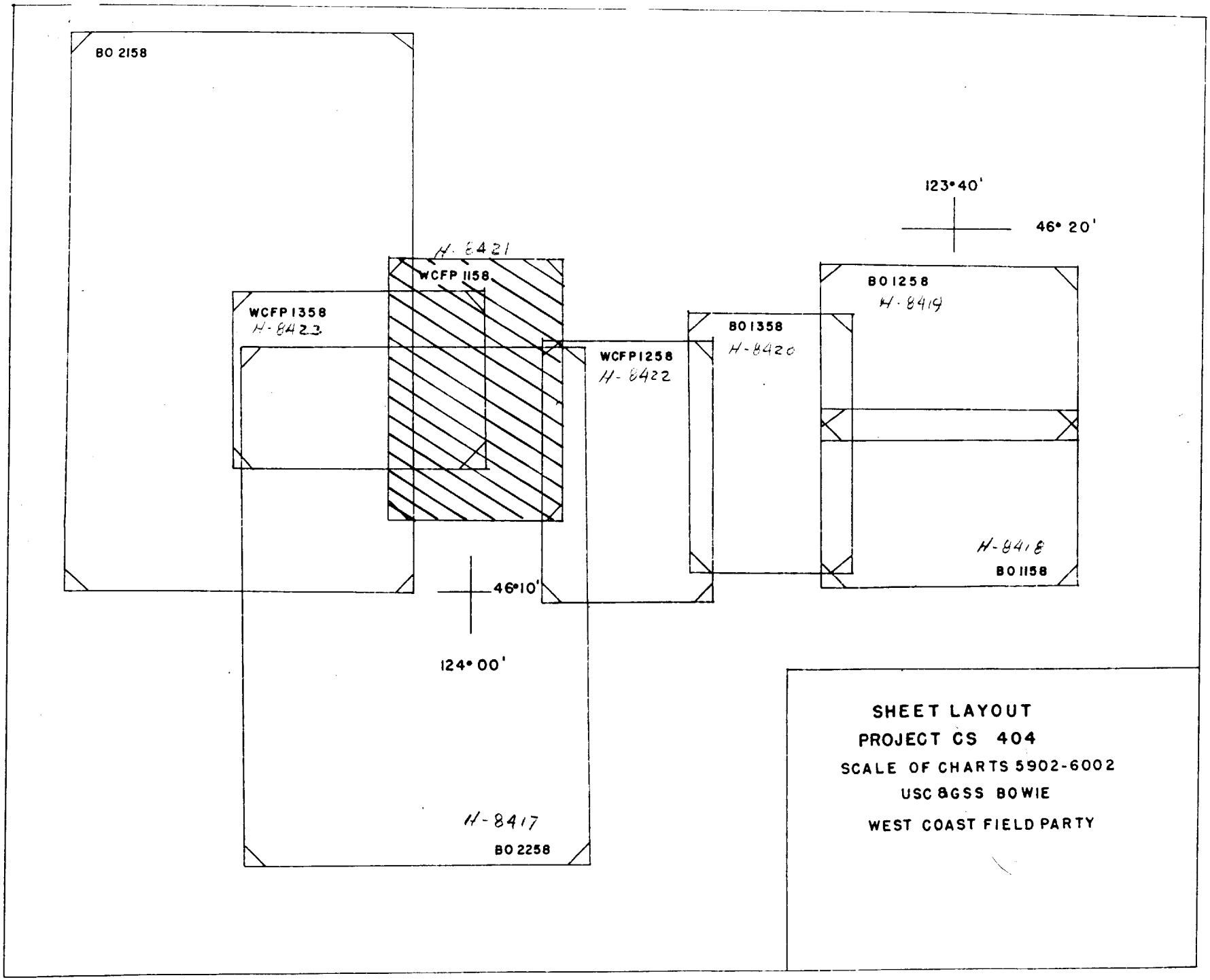
Z. TABULATION OF APPLICABLE DATA:

1. Tide data for gages at Point Adams, Chinook, and Ilwaco.
2. Advance Manuscripts and Descriptive Reports for T-10345, T-10346, T-10352, and T-10353.
3. Aids to Navigation form 567 to be submitted by the Portland Photogrammetric Office.
4. Coast Pilot information to be submitted as a separate report at a later date.

Respectfully submitted,

John O. Boyer

John O. Boyer
LCDR, C&GS



SHEET LAYOUT

PROJECT CS 404

SCALE OF CHARTS 5902-6002

USC&GSS BOWIE

WEST COAST FIELD PARTY

STATISTICS FOR
HYDROGRAPHIC SURVEY H-8421 (1958)

Volume	Day Letter	Date	No. of Positions	Naut. miles Sounding
1	a	21 April	91	12.6
1,2	b	22 "	141	15.0
2	c	23 "	113	12.8
2,3	d	24 "	65	8.8
3	e	25 "	148	12.0
3,4	f	28 "	141	13.7
4	g	29 "	174	13.6
5	h	30 "	97	9.4
5	j	1 May	98	8.5
5,6	k	2 "	97	9.5
6	l	5 "	117	11.3
6,7	m	6 "	156	18.8
7	n	7 "	94	11.1
7,8	p	8 "	101	12.7
8	q	12 "	151	16.6
9	r	13 "	130	17.1
9,10	s	14 "	137	14.0
10	t	15 "	163	20.5
11	u	19 "	69	9.8
11,12	v	20 "	161	20.7
12	w	21 "	61	6.8
12	x	22 "	80	7.0
12	y	23 "	59	5.0
13	z	26 "	35	3.3
13	aa	27 "	32	3.2
13	ab	28 "	112	13.5
13,14	ac	29 "	65	8.7
14	ad	2 June	95	11.8
14,15	ae	3 "	90	9.1
15	af	5 "	57	5.2
15	ag	9 "	49	1.5
15	ah	10 "	79	7.9
15,16	aj	11 "	82	7.6
16	ak	12 "	92	6.2
16	al	13 "	39	4.4
16	am	31 July	25	1.9
17	an	6 August	37	3.5
17	ap	13 "	20	4.0
		TOTALS	3553	379.1

TOTAL AREA: 18.5 square nautical miles

GEOGRAPHIC NAMES LIST
HYDROGRAPHIC SURVEY H-8421 (1958)

Baker Bay
Chinook
Clatsop Spit
Columbia River
Hammond
Ilwaco
Oregon
Pt. Adams
Sand Island
Washington

FATHOMETER CORRECTIONS
HYDROGRAPHIC SURVEY H-8421 (1958)

Launch CS-160 Fathometer Number 148 Initial set 2.0 ft.

"A" Scale:

Depth	Correction
0.0 to 20.0 ft.	-0.2 ft.
over 20.0 ft.	-0.4 ft.

"B" Scale:

Depth	Correction
all depths	-1.3 ft.

"C" Scale:

Depth	Correction
all depths	-2.6 ft.

Fathometer number 57-30 (used "an" day)

"A" Scale:

Depth	Correction
all depths	-0.2 ft.

NOTE:
The abstract of bar checks and the curves from which the above corrections were taken is attached.

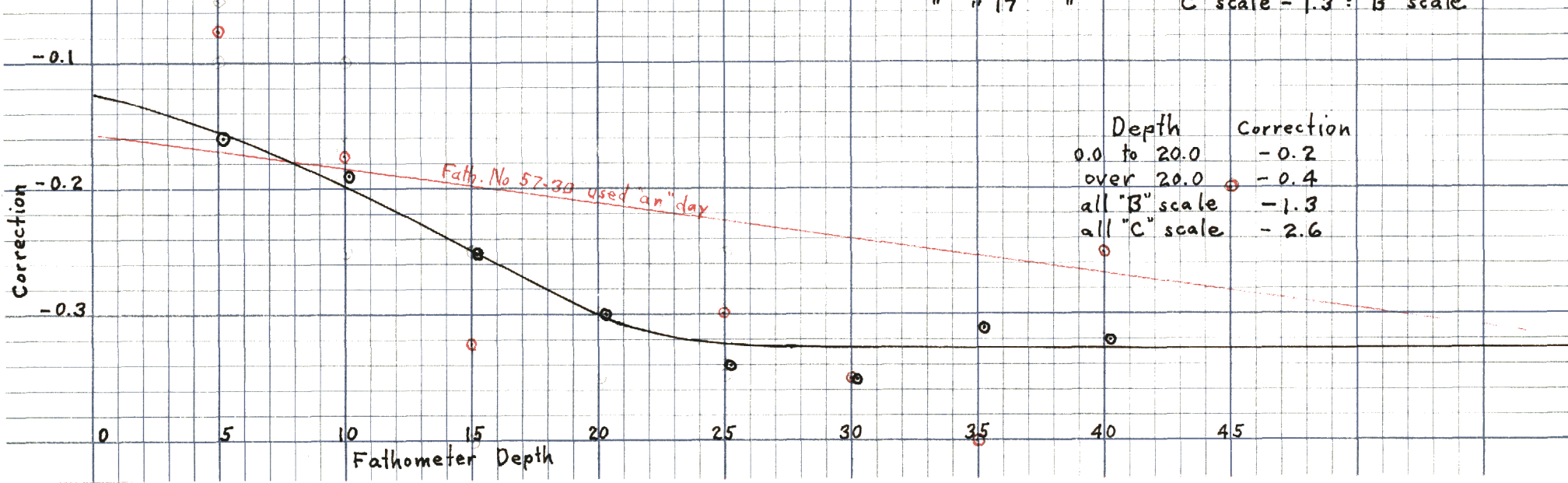
Sheet WCFP-1158 — BAR CHECK — Launch CS-160

Fathometer No. 148

Date	Day Lt.	True Depth (feet) 5	10	15	20	25	30	35	40	"B" Scale 35	40	Tide
4/21	a	0.0	0.0	0.0		-0.1		-0.2				LW
		0.0	0.0	+0.1		(+0.2) R						
		0.0	0.0	0.0		-0.2						F
		+0.1	0.0	0.0								
4/23	b[c]	-0.1	-0.1	-0.4		-0.4		-0.7				E
		0.0	0.0	-0.3		-0.5						
		0.0	0.0	-0.2		-0.3		-0.6				F
		-0.1	0.0	-0.1		-0.5						
4/24	d	-0.1	-0.2	-0.4		(-0.9) R			-0.5			F
		-0.2	-0.1	-0.2		-0.1						
		0.0	-0.1	0.0		0.0			0.0		-0.4	F
		-0.2	-0.1	-0.4		0.0			-0.2		-0.2	
4/25	e	-0.2	-0.2	-0.6		-0.8			-0.6		-1.0	F
		-0.2	-0.2	-0.4		-0.6			-0.6		-1.0	
									-0.8		-1.0[1]	
4/28	f	-0.1	-0.4	-0.3		(-1.0) R						E
		-0.3	-0.4	-0.5								
4/30	h	-0.2	-0.3	-0.6		-0.2			-0.4		-1.0	E
				0.0	-0.3							
5/1	j	-0.2	-0.3	(-1.0) R		-0.4						E
		-0.2		-0.2								
5/2	k	-0.1	-0.2	-0.3		-0.2			0.0		-1.0	F
5/5	l	-0.2	-0.2	-0.4		0.0			-0.2		-1.0	E
		-0.5	-0.1	-0.1	-0.3		-0.2					
5/7	n	0.0	0.0	-0.1		-0.1		-0.4		-1.2		E
		-0.2	-0.2	-0.2		-0.4		-0.4		-1.2		
5/14	s	-0.2	-0.3	-0.6	-0.4	-0.6						E
		-0.3	-0.4	-0.6	-0.4							
5/15	t	-0.2	-0.4	-0.6		-0.6		0.0		-0.6		F
		-0.2	-0.4	-0.4		-0.8		-0.2		-0.4		
5/19	u	+0.1	0.0	-0.2		-0.3		-0.3	-0.6	-0.6	-0.8	LW
		0.0	-0.1	0.0		-0.3		-0.2		-0.3		
		-0.5	-0.4	-0.7	-0.3	-0.4						F
		-0.3	-0.4	-0.3	-0.3	-0.3						
5/20	v	-0.1	-0.2	-0.2		-0.2		-0.1	0.0	-1.0	-1.0	F
		0.0	-0.3	-0.4		-0.2		-0.1	0.0	-1.0		
								-0.1				
5/21	w	0.0	0.0	0.0		(+0.2) R		(+0.2) R		-0.6		LW
		0.0	0.0	+0.1		(+0.3)		(+0.4)		-0.7		
5/22	x	-0.1	-0.2	-0.2	-0.1	-0.6						LW
		-0.1	0.0	-0.2								
		(-1.0	-1.0	-0.8)	fish bent and pushed up, use nty for part of this day							F
		-1.2	-1.2	-1.0)								
5/23	y	-0.2	-0.2	-0.1	-0.3	-0.3						E
		0.0	-0.1	-0.2	-0.4	-0.4						
5/28	ab	-0.2	-0.5	-0.4	-0.3							LW
			-0.4	-0.1								
5/29	ac	-0.6	(-0.8) R	-0.3	-0.8	-0.7						F
		-0.3	-0.3	-0.1	-0.1	-0.5						
6/2	ad	-0.1	-0.3	-0.2	-0.4	-0.6						E
		-0.2	-0.2	-0.1	-0.1							
6/5	af	-0.4	(-0.7) R	-0.5	-0.6	-0.3	-0.5					HW
		-0.6	-0.6	-0.5	-0.3	-0.4						
6/9	ag		-0.4	-0.4	-0.4	-0.3						F
		-0.3	-0.4	-0.4	-0.3							
6/10	ah	-0.2	0.0	-0.4	0.0							E
		0.0	0.0	-0.1	-0.3	-0.2						
6/11	aj aj	-0.1	-0.1	-0.2	-0.3	-0.3						F
		-0.3	-0.1	-0.1	-0.2	-0.1						
6/12	ak	0.0	-0.1	-0.1		-0.2		-0.5		-1.0		F
		-0.1	0.0	0.0	-0.1	-0.2		-0.5		-1.0		
Sum		8.5/54	9.9/53	14.1/56	7.0/23	13.6/40	0.7/2	4.3/14	3.9/12			
Mean		-0.16	-0.19	-0.25	-0.30	-0.34	-0.35	-0.31	-0.32			

Note:
Reject values > 0.5 from mean

PHASE COMPARISON taken 5/2/58
Mean of 8 comparisons "B" scale - 0.9 = "A" scale
" " 17 " "C" scale - 1.3 = "B" scale



Depth	Correction
0.0 to 20.0	-0.2
over 20.0	-0.4
all "B" scale	-1.3
all "C" scale	-2.6

TIDE NOTE
HYDROGRAPHIC SURVEY H-8421 (1958)

Portable automatic tide gages listed below were maintained during this survey.

POINT ADAMS:
Lat. 46 12.5' Long. 123 57.1' MLLW on staff 2.1 ft.

ILWACO:
Lat. 46 18.3' Long. 124 02.5' MLLW on staff 1.6 ft.

CHINOOK:
Lat. 46 16.3' Long. 123 56.9' MLLW on staff 3.4 ft.

A comparison of tides recorded at Point Adams and North Jetty was also made.

The area was divided into five tide zones. Tide reducers for the eastern half of Baker Bay were taken directly from the Chinook gage, and Ilwaco tides were used for the western half of the bay. The eastern portion of the river was reduced using the tides directly from the gage at Point Adams. The centeral area used Point Adams minus 10 minutes and minus 0.2 feet to HW. The western portion used Point Adams minus 20 minutes and minus 0.4 feet to HW. The tide zones are clearly marked on the boat sheet. There was not a big difference in the tides at Chinook, Ilwaco, and Point Adams; so no difficulty was had drawing depth curves at the junctions of the various tide zones.

The curves from which tide reducers were taken are attached.

GRAPH FOR TIDE REDUCERS ~~FATHOMS~~ (FEET)

WCFP 1158

Zone A (Chinook)
Zone B (Ilwaco)
Zone C (Pt. A. - 20 m. - 0.4 ft)
Zone D (Pt. A. - 10 m. - 0.2 ft)
Zone E (Pt. Adams)

5/29
6/3
5/27
5/23
5/21
6/2
5/24
20 May
5/22
5/25

Height of tide (above datum)

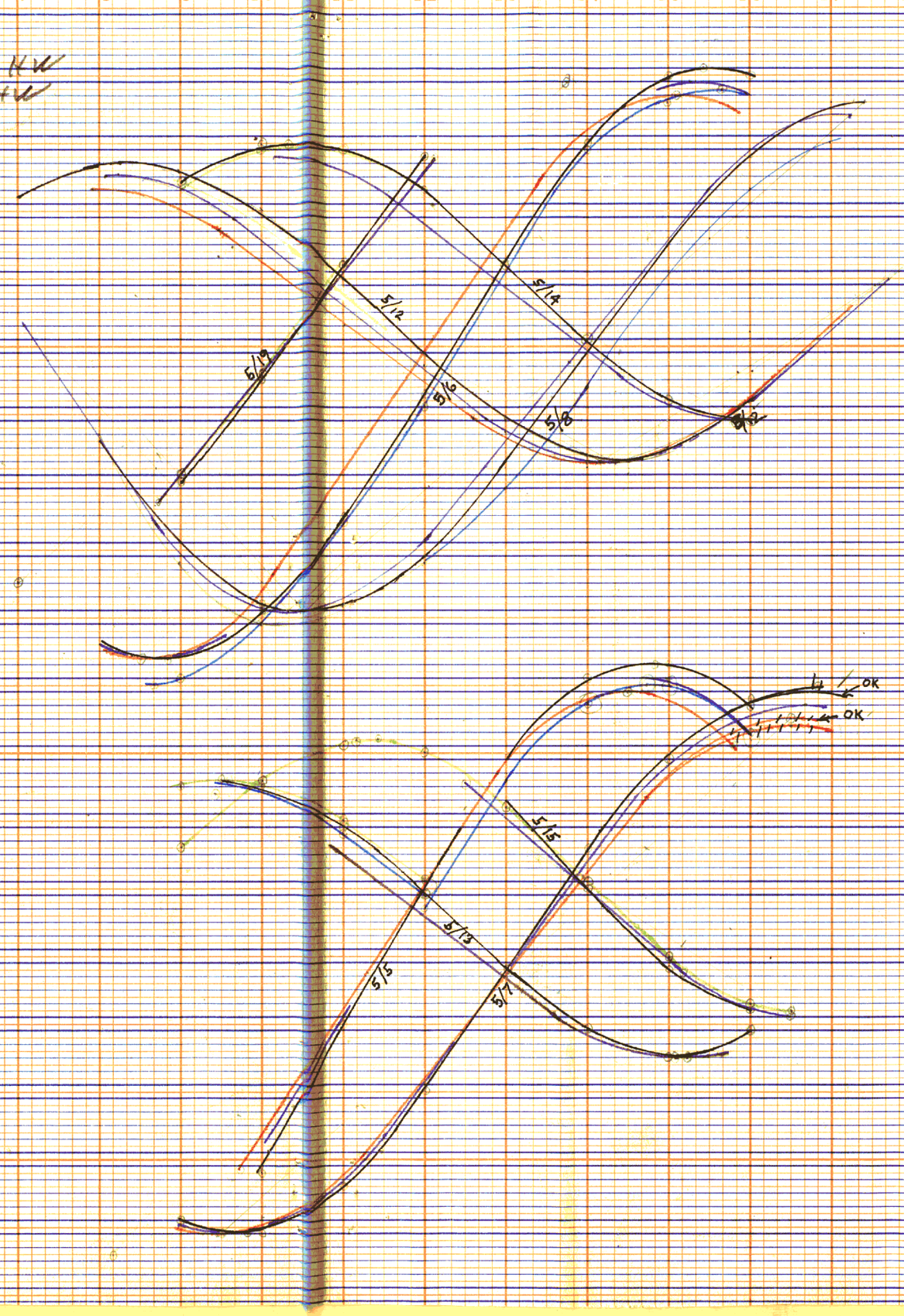
Tide Reducers (in feet)

GRAPH FOR TIDE REDUCERS ~~FATHOMS~~ (FEET)

Height of tide (above datum)

Tide Reducers (in feet)

Zone A (Chinook)
Zone B (Ilwaco)
Zone C Pt Adams - 20 min - 0.4 ft HW
Zone D Pt Adams - 10 min - 0.2 ft HW
Zone E (Pt. Adams)



GRAPH FOR TIDE REDUCERS ~~FATHOMS~~ (FEET)

WCFP 1158

Height of tide (above datum)

Tide Reducers (in feet)

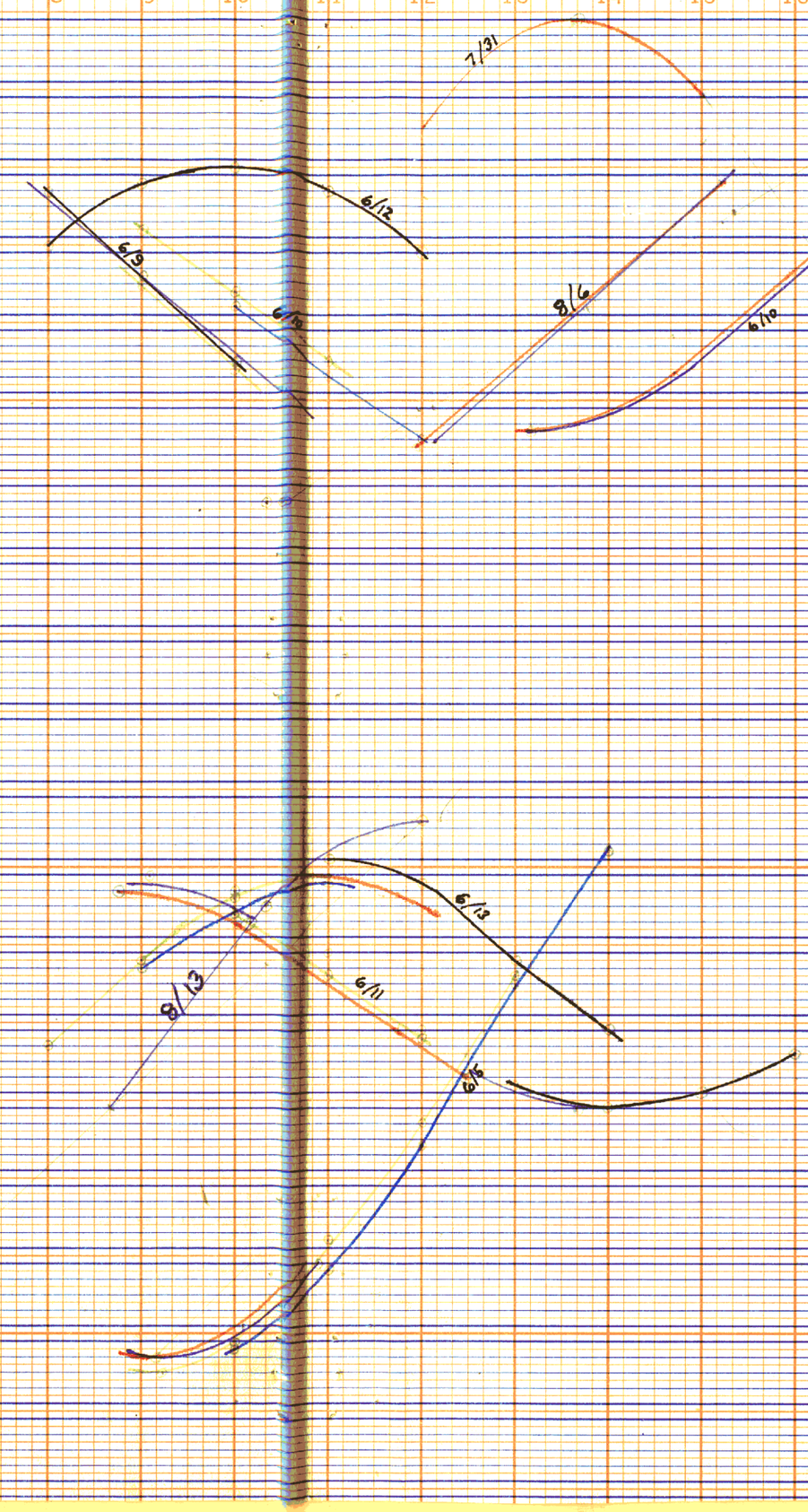
Zone A Chinook

Zone B Ilwaco

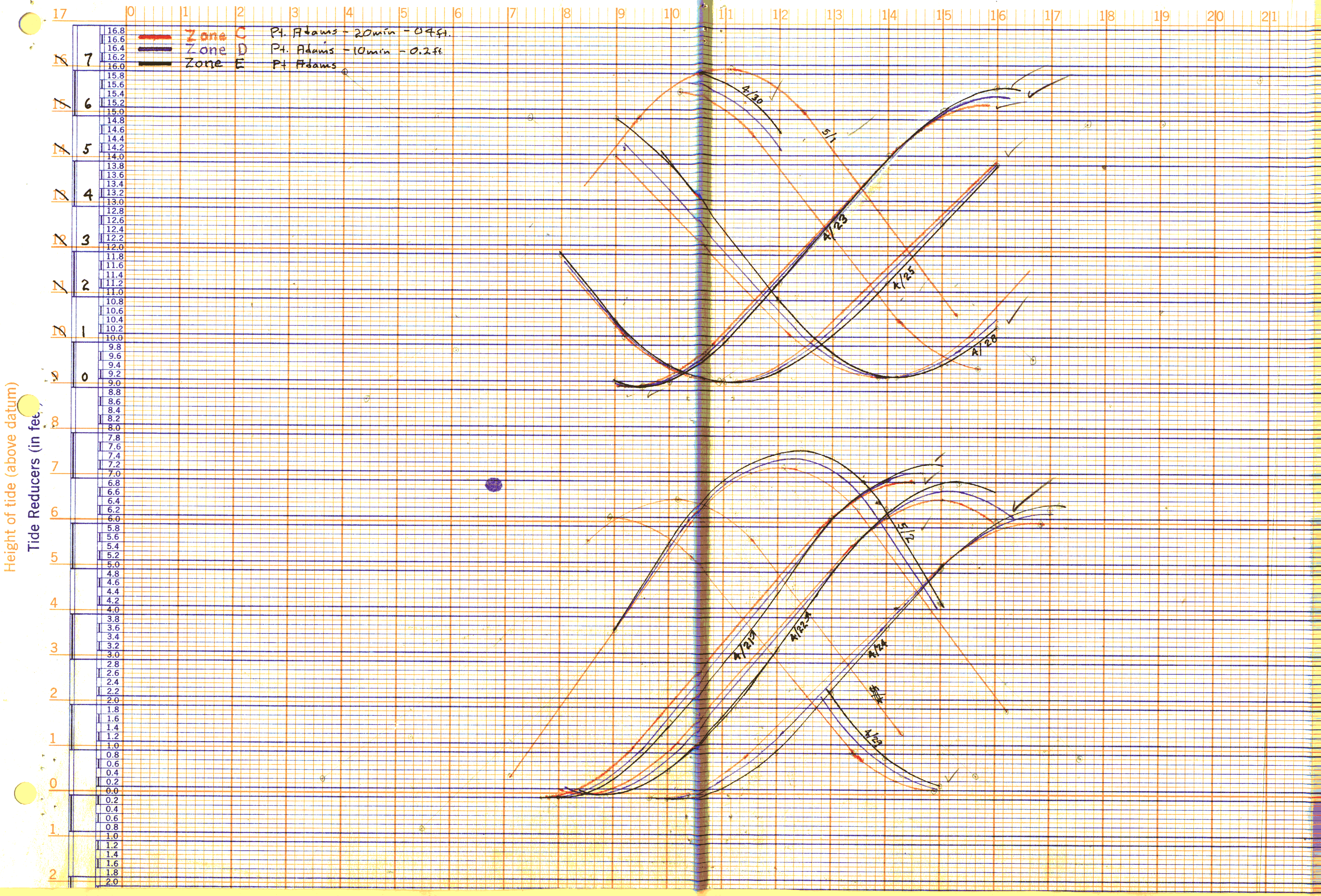
Zone C

Zone D

Zone E Pt. Adams

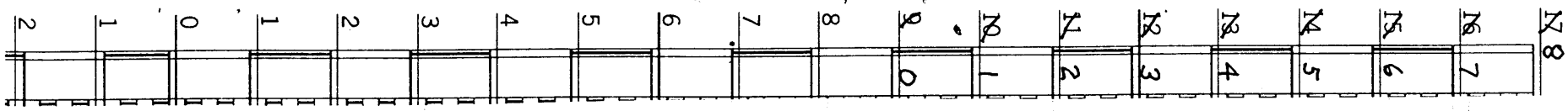


GRAPH FOR TIDE REDUCERS ~~(FATHOMS)~~ (FEET) WCFP 1158



Height of tide (above datum)

Tide Reducers (in feet)



LIST OF SIGNALS USED
HYDROGRAPHIC SURVEY H-8421 (1958)

Hydro. Name	Origin
AND	Volume 6, page 18
ANN	Manuscript T-10345, No. 027
ANT	" T-10353, No. 001
APE	CAPE DISAPPOINTMENT LIGHTHOUSE, 1873
ART	Manuscript T-10353, Dol
BAR	" T-10345, Baker Bay West Channel Lt. 14
BARN	" T-10345, No. 008
BIL	" T-10345, No. 005
BLU	Volume 1, page 3
BLUF	BLUFF 2, 1926
BOA	HAMMOND, PILOT STATION BOATHOUSE DOWNSTREAM GABLE, 1951
BOY	Manuscript T-10346, Chinook Dike Lt.
BUN	" T-10345, No. 026
CAN	" T-10345, Fort Canby Lt 15
CAT	Volume 7, page 65
CUP	POINT ADAMS, COAST GUARD STATION CUPOLA, 1951
CUR	Manuscript T-10345, Baker Bay West Channel Lt. 4
CUT	" T-10345, " " " " Lt. 17
DES	DESDEMONA SANDS LIGHT, 1957
DIK	Manuscript T-10345, Sand Island Lower Dike Lt.
DOC	ILWACO DOCK LIGHT, 1957
DOL	Manuscript T-10353, Dol
DOT	" T-10353, Pile
DUD	" T-10345, No. 028
EAR	SAND ISLAND RANGE REAR LIGHT, 1956
END	BAKER 2, 1951
FOR	FORT STEVENS WHARF 26 LIGHT, 1951
FUN	Manuscript T-10346, No. 010
GAB	" T-10346, No. 023
GAG	" T-10345, No. 004
GIN	" T-10346, Baker Bay West Channel Lt. 12
GUN	GUN (USE), 1905
GUT	Manuscript T-10353, pile
HAT	" T-10346, No. 024
HIM	" T-10345, No. 006
HOP	" T-10345, Baker Bay West Channel Lt. 22
HOW	Volume 1, page 3
HUM	CHUMMY, 1956
ITE	Manuscript T-10353, White (USE)
JET	FORT STEVENS WEST JETTY LIGHT, 1951
JUG	Manuscript T-10346, No. 011
KAS	" T-10346, Baker Bay East Channel Lt. 2
KIM	" T-10346, Baker Bay East Channel Lt. 6
LEE	Volume 1, page 3

Hydro. Name	Origin
LIG	FORT STEVENS EAST JETTY LIGHT, 1951
MAR	CHINOOK CHANNEL LIGHT, 1952
MEG	Manuscript T-10345, Baker Bay West Channel Lt. 20
MIK	Volume 1, page 3
NAT	SAND ISLAND LOOKOUT TOWER M-4,1952
NEL	Manuscript T-10345, Baker Bay West Channel Lt. 6
NOOK	" T-10346, No. 013
NUT	" T-10345, Baker Bay West Channel East Jetty Lt.
OIL	" T-10345, No. 002
ONN	" T-10345, No. 007
PEG	" T-10346, East Gable of Barn
PET	CHINOOK, 1935
POD	Manuscript T-10346, No. 12
RAP	BAKER BAY EAST CHANNEL LIGHT, 1952
RES	TRESTLE (USE), 1956
RON	Volume 6, page 18
ROY	Volume 1, page 3
RUB	Manuscript T-10345, Baker Bay East Channel Lt. 15
RUM	" T-10345, No. 025
SAL	" T-10345, No. 009
SAM	BAKER BAY EAST CHANNEL LIGHT 23, 1952
SAN	SAND ISLAND MIDDLE DIKE LIGHT, 1952
SAP	Manuscript T-10345, Baker Bay West Channel Lt. 8
SOP	CLATSOP SPIT, COAST GUARD LOOKOUT TOWER, 1956
TAN	FORT STEVENS QUARTERMASTER TANK, 1951
TAR	Manuscript T-10345, No. 003
TOM	BAKER BAY EAST CHANNEL LIGHT 13, 1952
TOW	SAND ISLAND LOOKOUT TOWER M-5, 1952
TRE	Volume 7, page 42
TRY	BAKER BAY EAST CHANNEL LIGHT 21, 1952
UPP	SAND ISLAND UPPER DIKE LIGHT, 1952
USE	POINT (USE), 1913
WES	Manuscript T-10345, Baker Bay West Jetty Lt.

APPROVAL SHEET
HYDROGRAPHIC SURVEY H-8421 (1958)

This survey was done under my daily supervision. I believe the survey is complete, adequate for charting purposes, and no additional work is necessary.

The officer in charge of the launch had never done visual launch hydrography, and all but two of the personnel under him were new. Strong currents made running straight lines difficult, causing many splits to be run and over development in some areas. Considering the personnel was new and the area difficult, I believe the party made a very good survey.

John O. Boyer

John O. Boyer
LCDR, C&GS
Officer in Charge

GEOGRAPHIC NAMES

Survey No. H-8421

Name on Survey	On Chart No. A	On previous survey No. B	On U. S. quadrangle Maps C	From local information D	On local Maps E	P. O. Guide or Map F	Rand McNally Atlas G	U. S. Light List H	K	
Oregon									BGN	1
Hammond										2
Pt. Adams			(tide station)							3
Clatsop Spit										4
Columbia River									BGN	5
Sand Island										6
Chinook			(tide station)							7
Baker Bay									BGN	8
Ilwaco			(tide Station)							9
Washington									BGN	10
McKenzie Head			(title only, slightly off limits of sheet)						"	11
										12
										13
				Names approved 11-3-58 L. Heck						14
										15
										16
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										27

M 234

Hydrographic Surveys (Chart Division)

HYDROGRAPHIC SURVEY NO. 8421

Records accompanying survey:

Boat sheets 1.; sounding vols. 17.; wire drag vols. .....;

bomb vols. .....; graphic recorder rolls 14 Envelopes

special reports, etc. 1-Smooth sheet and 1-Descriptive report.

(Blueline impressions T-10345 & T-10352; also Manuscripts T-10345 & T-10352 filed with H-8423)

The following statistics will be submitted with the cartographer's report on the sheet:

Number of positions on sheet		.....
Number of positions checked		.....
Number of positions revised		.....
Number of soundings revised (refers to depth only)		.....
Number of soundings erroneously spaced		.....
Number of signals erroneously plotted or transferred		.....
Topographic details	Time	.....
Junctions	Time	.....
Verification of soundings from graphic record	Time	.....

Verification by.....Total time ..... Date .....

Reviewed by..... Time ..... Date .....

M-2232-1

VERIFIER'S REPORT OF HYDROGRAPHIC SURVEY NO. H- 8421

The verifier should deal with the present hydrographic survey only, as the reviewer considers its relation to previous surveys and published charts. He should be thoroughly familiar with Chapters 3, 7 and 9 of the Hydrographic Manual.

1. The descriptive report was consulted and appropriate notes were made in soft pencil regarding action taken.

2. Soundings originating with the survey and mentioned in the descriptive report have been verified, including latitude and longitude.

3. All reference to survey sheets mentioned in the descriptive report include the registry number and year.

4. Geographic names of hydrographic features if on sheet are in slanting lettering and of topographic features in vertical lettering.

5. All items affecting the plotting of the survey which are entered in the remarks columns of the sounding records were noted and check marked. In all cases appropriate action was taken.

6. All positions verified instrumentally were check marked in the sounding records.

7. All critical soundings are clear and legible and are a little larger than the adjacent soundings.

8. The metal protractor has been checked within the last three months.

9. The protracting and plotting of all bad crossings were verified.

10 All detached positions locating critical soundings, rocks or buoys were verified.

11. The boat sheet was compared with the smooth sheet.

12 The spacing of soundings as recorded in the records was closely followed.

13. The bottom characteristics were shown on outstanding shoals.

14. The reduction and plotting of doubtful soundings were checked.

15. The transfer of contemporary topographic information was carefully examined.

16. All junctions were transferred and overlapping curves made identical.

17. The notation "JOINS H- (19--)" was added in ink for all contemporary adjoining or overlapping sheets now registered. Those not verified are shown in pencil.

18. The depth curves have been inspected before inking.

19. All triangulation stations and transfer of topographic and hydrographic signals were checked.

20. Heights of rocks were checked against range of tide.

21. Rocks transferred from topographic surveys have a dotted curve where shown thereon. Rocks located accurately by hydrographer are encircled by dotted red curve.

22. Unnecessary pencil notes have been removed.

23. Objects on which signals are located and which fall outside of the low water line have been described on the sheet.

24. The low water line and delineation of shoal areas have been properly shown.

25. Degree and minutes values and symbols have been checked.

26. Questionable soundings have been checked on the fathograms.

27. Source of shoreline and signals (when not given in report).

28. All notes on sheet are in accordance with figure 171 in the Hydrographic Manual.

29. All aids located, with those on contemporary topographic sheets, have been shown on survey.

30. Depth curves were satisfactory except as follows:

31. Sounding line crossings were satisfactory except as follows:

32. Junctions with contemporary surveys were satisfactory except as follows:

33. Condition of sounding records was satisfactory except as follows:

34. The protracting was satisfactory except as follows:

35. The field plotting of soundings was satisfactory except as follows:

36. Notes to reviewer:

Verified by Date

Form 712
(11-30-55)

U. S. DEPARTMENT OF COMMERCE
COAST AND GEODETIC SURVEY

RHC

TIDE NOTE FOR HYDROGRAPHIC SHEET

28 November 1958

Chart Division: R. H. Carstens:

Plane of reference approved in
17 volumes of sounding records for

HYDROGRAPHIC SHEET 8421

Locality Columbia River, Wash.-Oregon

Chief of Party: J. O. Boyer in 1958

Plane of reference is mean lower low water, reading

3.4 ft. on tide staff at Chinook, Washington

12.6 ft. below B.M. 1 (1933)

1.6 ft. on tide staff at Ilwaco, Washington
10.9 ft. below B.M. 1 (1933)

2.1 ft. on tide staff at Point Adams, Oregon
11.9 ft. below B.M. 4 (1940)

Height of mean high water above plane of reference is as follows:

Chinook	=	7.3 feet
Ilwaco	=	7.0 feet
Port Adams	=	7.6 feet

Condition of records satisfactory except as noted below:

William Shapiro
Signature
Chief, Tides Branch

Comm-DC 34330

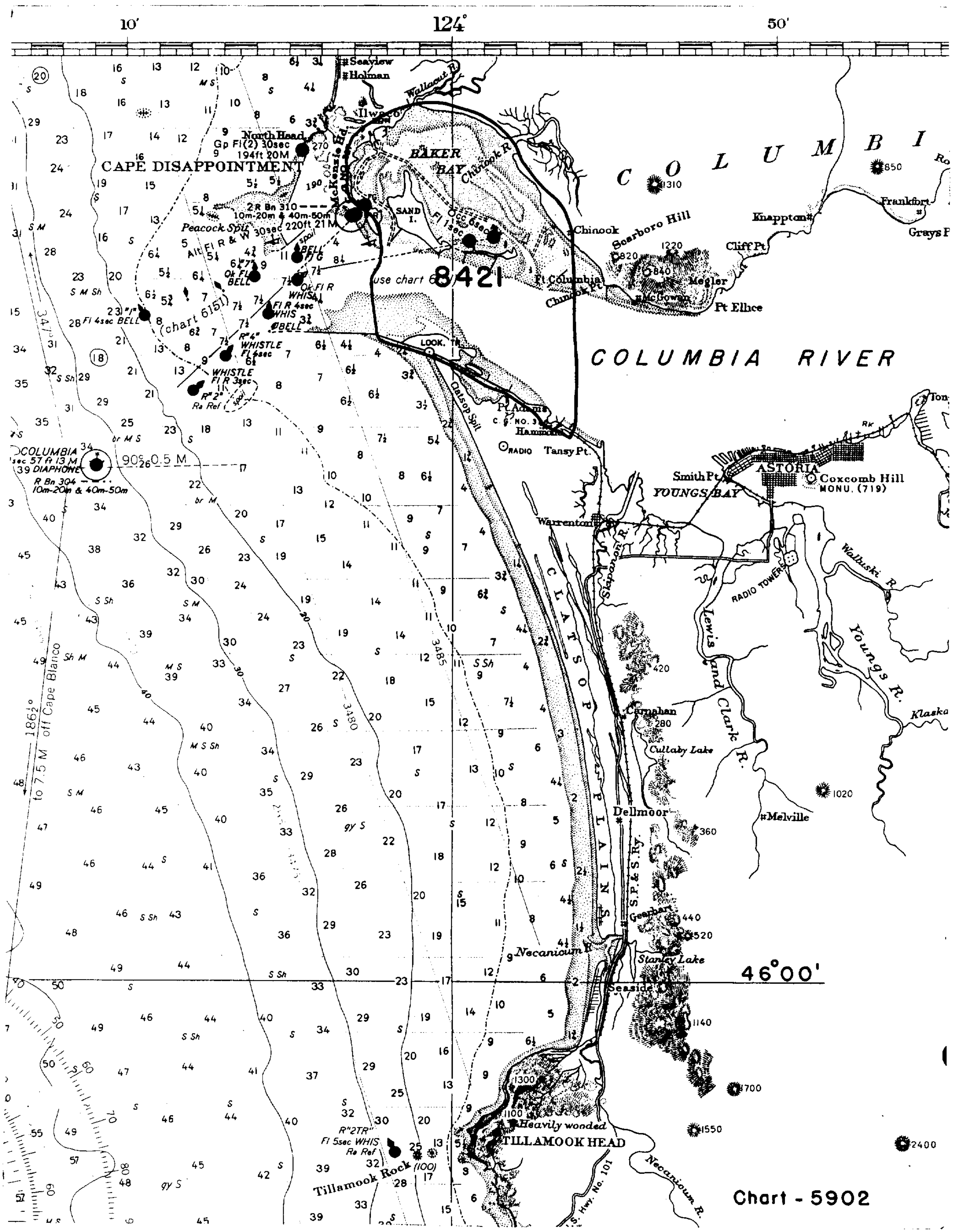
10'
124°
50'
CAPE DISAPPOINTMENT
North Head
McKenzie Hd.
Peacock Spit
Seaview
Holman
Ilwaco
Wallacut R.
BAKER BAY
Chinook R.
SAND I.
8421
use chart 6151
(chart 6151)
COLUMBIA
Scarboro Hill
Chinook
Knappton
Frankfort
Grays P
Cliff Pt
Megler
McGowan
Pt Ellice
Pt Columbia
Chinook Pt
COLUMBIA RIVER
Clatsop Spit
Pt Adams
Hammond
Tansy Pt.
Smith Pt
ASTORIA
Coxcomb Hill
MONU. (719)
YOUNGS BAY
Warrenton
Skipanon R.
CLATSOP PLAINS
RADIO TOWERS
Walluski R.
Youngs R.
Lewis and Clark R.
Klaskanine
Carnahan
Cullaby Lake
Dellmoor
Melville
S.P. & S. Ry.
Gearhart
Stanley Lake
Necanicum R.
Seaside
46°00'
Heavily wooded
TILLAMOOK HEAD
Tillamook Rock
U.S. Hwy. No. 101
Necanicum R.
186½° to 7.5 M off Cape Blanco
347½°

Chart - 5902

NAUTICAL CHARTS BRANCH

SURVEY NO. H8421

Record of Application to Charts

DATE	CHART	CARTOGRAPHER	REMARKS
10/29/58	6151	S.G.M.	Before ~~After~~ Verification and Review
~~10/12/58~~	~~6151~~	~~L. Thurmond~~	Partially applied.
10/14/58	6151	L. Thurmond RCS	Before ~~After~~ Verification and Review
			Before After Verification and Review
			Before After Verification and Review
			Before After Verification and Review
			Before After Verification and Review
			Before After Verification and Review
			Before After Verification and Review
			Before After Verification and Review
			Before After Verification and Review

M-2168-1

A basic hydrographic or topographic survey supersedes all information of like nature on the uncorrected chart. Give reasons for deviations, if any, from recommendations made under "Comparison with Charts" in the Review.